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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/730,154      | 12/08/2003  | Christopher McCarty  | 02-6220             | 2167             |

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EXAMINER

BAE, JI H

ART UNIT PAPER NUMBER

2115

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/730,154 | <b>Applicant(s)</b><br>MCCARTY ET AL. |  |
|                              | <b>Examiner</b><br>Ji H. Bae         | <b>Art Unit</b><br>2115               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 10, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8, 10, and 11 each recites the limitation "the internal memory" in line 1. There is insufficient antecedent basis for this limitation in the claim. There is no prior recitation of an internal memory in the claim or the parent claims (claims 1 and 4).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10, 12-22, 24, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilder et al., U.S. Patent No. 5,469,453.

Regarding claim 1, Gilder teaches:

a bus interface controller [RAID controller 310, Fig. 4];

a write journal memory on the bus interface controller [col. 12, lines 20-25];

and an external power source for providing power to the write journal memory, the external power source being located externally with respect to the bus interface controller [battery backed-up RAM, col. 12, lines 26-27].

Art Unit: 2115

Regarding claim 2, Gilder teaches that the controller comprises a SCSI interface [Fig. 4].

Regarding claim 3, Gilder teaches that the write journal memory is a RAM.

Regarding claim 4, Gilder teaches that the external power source is a battery.

Regarding claim 10, Gilder teaches that the battery supplies power to the internal memory only when the bus interface controller power is turned off.

Regarding claim 12, Gilder teaches a method comprising:

logging write information [col. 12, lines 37-47] to a real data disk and to a redundant data information disk [Fig. 3, RAID devices] in a memory internal to a bus interface controller unit [non-volatile memory 413, Fig. 4];

and if power is shut off to the bus interface controller unit, providing power to the internal memory through an external power source [battery backed-up RAM, col. 12, lines 26-27].

Regarding claims 13-15, Gilder teaches the recording of completed and incomplete write operations in the internal memory.

Regarding claim 16, Gilder teaches deleting logged write information from the internal memory when all writes complete [col. 12, lines 48-52].

Regarding claims 17 and 18, Gilder teaches determining a power fault condition and waiting for power restoration.

Regarding claims 19 and 20, Gilder teaches determining if entries remain in the write journal after power restoration, and if any remain, processing any incomplete commands [col. 12, line 53 to col. 13, line 20].

Regarding claim 21, Gilder teaches a system comprising:

means for controlling a bus interface located on a bus interface controller board [RAID controller 310, Fig. 4];

Art Unit: 2115

means for logging a write journal of write activity for a storage device, the means for logging a write journal being located on the bus interface controller board [col. 12, lines 37-47]; and

means for supplying power to the means for logging a write journal, the means for supplying power being external to the bus interface controller board [battery backed-up RAM, col. 12, lines 26-27].

Regarding claim 22, Gilder teaches that the bus interface controller comprises a SCSI interface [Fig. 4].

Regarding claims 24 and 25, Gilder teaches a Redundant Array of Independent Disks.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9, 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilder in view Dillon et al., ("Online Exclusive: Discrete Memories Trade Off with ASIC Cells", EETimes Online, 3 January 2002).

Regarding claim 5, it would have been obvious to one of ordinary skill in the art to use an electrolytic capacitor as a power source as a matter of design choice. Capacitors are commonly used in the art as a short-term power supply, owing to their very nature as charge storing devices.

Regarding claims 6 and 7, it would have been obvious to one of ordinary skill in the art to provide external power from an AC to DC converter at 110 volts, 60 Hz. Such an external power supply is a standard means of supplying power to electrical systems.

Regarding claims 8 and 9, Gilder does not specifically teach configurations of a bus interface controller and internal memory comprising integrated or discrete components.

Dillon teaches various design trade-offs for discrete and integrated memory components for an ASIC design.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Gilder and Dillon by implementing the bus interface controller and internal memory in either a discrete or integrated design. Dillon teaches that both designs have trade-offs, and that different circumstances may necessitate different designs. Depending on the constraints, each design may improve the system of Gilder in different ways.

Regarding claim 11, it would have been obvious to one of ordinary skill in the art to supply power from the battery only when there is a valid write journal memory and the bus interface controller power is off. If there is not a write journal memory present, then the need for battery back-up is obviated.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Cargemel et al., U.S. Patent No. 6,480,933 B1;

Anderson et al., U.S. Patent No. 6,295,577 B1;

Schultz et al., U.S. Patent No. 5,448,719;

Art Unit: 2115

Alexander et al., U.S. Patent No. 5,586,248;

Lui et al., U.S. Patent No. 5,379,417;

Ichinomiya et al., U.S. Patent No. 5,550,975;

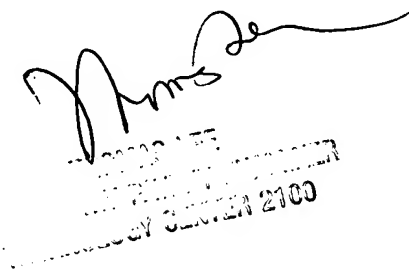
Binford et al., U.S. Patent No. 5,533,190.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji H. Bae whose telephone number is 571-272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Ji H. Bae', is written over a rectangular stamp. The stamp contains the text '2003-155' and 'ART UNIT 2115' in a stylized, possibly embossed or stamped font.